REMARKS

Claims 1-4 are pending, claim 4 having been withdrawn as being directed to a non-elected invention.

The Office Action rejects claims 1-3 under 35 U.S.C. 103(a) as being obvious over Kerres (U.S. Patent No. 6,767,585) in view of Ogata et al. (U.S. Patent No. 5,403,675). This rejection is traversed.

The present claims require a "proton conductive membrane composition comprising a heteropolyacid and a polyarylene polyarylene having a sulfonic group" (claim 1.

Thus, the present claims require both a heteropolyacid and a sulfonated polyarylene.

As the Office Action correctly notes, "Kerres does not disclose sulfonic group containing polyarylene" (page 3 of the Office Action). However, the Office Action asserts that it would have been obvious for one of skill in the art "to use sulfonated polyarylene as a polymer in the invention/composition of Kerres to enhance proton conductivity" (page 3 of the Office Action).

However, Kerres et al. actually teaches against using compounds such as those of Ogata et al., stating "[p]olymers with basic groups, such as sulfonic acid groups...are increasingly being described in the literature...Disadvantages of these membranes are their mechanical instability, with a low modulus of elasticity, a low tensile strength, and a low upper flow limit, and their high permeability to hydrogen, oxygen and methanol" (column 1, lines 42-59). Kerres discloses that their objects are "to have a very good mechanical stability, in particular an improved modulus of elasticity, a higher tensile strength, and improved swelling properties" (column 2, lines 30-32).

Applicants respectfully submit that one of ordinary skill in the art would not have found it obvious to replace the polyers of Kerres that have "improved modulus of elasticity, a higher tensile strength, and improved swelling properties" with those of the prior art sulfonic acid group containing polymers, such as those of Ogata et al. which Kerres states have "mechanical instability, with a low modulus of elasticity, a low tensile strength, and a low upper flow limit, and their high permeability to hydrogen, oxygen and methanol." Furthermore, it is respectfully submitted that the applied references fail to teach or suggest that "sulfonated group containing polyarylene" would "enhance proton conductivity" of the Kerres et al. polymers, as is asserted in the Office Action. Thus, no motivation to combine the teachings of the applied references existed for one of skill in the art **at the time of the presently claimed invention**.

In addition, Ogata et al. specifically teaches against molding using such fillers, stating that "[i]t is highly recommended to utilize highly purified (preferably greater than about 99% pure) paradihalobenzene monomer from which any water or other aprotic impurities have been removed" (column 5, lines 51-54).

Thus, it is respectfully submitted that a *prima facie* case of obviousness has not been established since one of skill in the art would not have been expected to combine the teachings of the cited references.

Furthermore, Kerres et al. nowhere teaches or suggests that the heteropolyacids mentioned in their specification provide any advantages in comparison to other doping agents they list, such as "all known Lewis and Bronsted acids, preferably inorganic Lewis and Bronsted acids....Dopants which are particularly preferred in accordance with the invention are sulfuric and phosphoric acid. One especially preferred dopant is phosphoric acid" (column 13, lines 25-44).

Applicants respectfully submit that one of skill in the art would not have been motivated to specifically select heteropolyacids from the long list of acids provided by Kerres et al., which includes several specifically preferred acids.

In contrast, the examples described in the present specification demonstrate the unexpected results achieved by the presently claimed invention. In particular, Table 1 on page 40 of the present specification shows that the proton conductivity, tensile test results and oxidation resistance results are superior when a heteropolyacid is included.

Applicants note that neither of Kerres et al. nor Ogata et al. anywhere teach or suggest that improved proton conductivity can be achieved by utilizing heteropolyacid.

Thus, the presently claimed invention, which requires both sulfonated polyarylene and heteropolyacid, and the above-discussed unexpected results achieved thereby, would not have been obvious over the combination of Kerres et al. and Ogata et al.

Reconsideration and withdrawal of the rejection of claim 1-3 under 35 U.S.C. 103(a) are respectfully requested.

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this paper is not considered timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300, **making reference to Attorney Docket No. 026035-00005**.

Respectfully submitted,

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